



Baseline Groundwater Monitoring Event 3 Evaluation Report

Mallard North Landfill

December 2011

*Prepared For
Forest Preserve District of DuPage County*

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Section 1

Executive Summary

1.1 Purpose and Scope

This Baseline Groundwater Monitoring Event 3 Evaluation Report (Report) describes the results of the third baseline groundwater monitoring event that was completed during July/August 2011. The Report provides an evaluation of the current groundwater conditions.

1.2 Site Location and Description

The Mallard North Landfill (MNL) is located in T 40N, R 10 E, Section 7, DuPage County, Illinois, near the Village of Hanover Park, approximately 28 miles west-northwest of downtown Chicago. The land on which the MNL is located is currently owned by the Forest Preserve District of DuPage County (District). A residential area is located to the north and west of the site. The West Branch of the DuPage River (WBDR) bounds the landfill on the east, south, and southwest. The Greenbrook Elementary School is located across the WBDR and to the east of the MNL. The Mallard Lake Landfill (MLL) (a closed permitted solid waste disposal facility) is located south of the MNL and on the opposite side of the WBDR (see Figure 1).

In general, the surface topography of the MNL slopes from a high point of approximately 817 feet above mean sea level (a.m.s.l.) near the center of the site toward the WBDR to the east, west, and south to an elevation of approximately 765 a.m.s.l. The WBDR enters the property on the northeast corner of the MNL and flows along the east, south, and west perimeter of the site until it departs to the west of the MNL. Prior to the operation of the MNL, the WBDR was diverted from its historical path, which was roughly through the center of the MNL, to its present configuration.

1.3 Results of Groundwater Monitoring

Groundwater monitoring (Event 3) was completed during late July and early August 2011. Depth to groundwater measurements were obtained at wells at the MNL by TRC personnel and in the Northeast Area (the investigation area located to the southeast of MNL) by staff of AECom. A total of 35 monitoring points were to be sampled by TRC staff for an extensive suite of chemical parameters. However, one well (GP-6) was dry. An evaluation of the analytical results has been performed to provide a general assessment of current groundwater quality conditions.

Event 3 groundwater level measurements continue to indicate that shallow groundwater flows away from a groundwater high located near the northwest corner of MNL, toward the WBDR (southwest, south, and east). There is also a water table high point located to the south and southeast of the Greenbrook Elementary School. The shallow groundwater flows from this high point to the southwest (toward Keeneyville Creek) and to the north and west (toward the WBDR). This is consistent with the shallow groundwater flow pattern observed during both the first and second baseline groundwater monitoring events.

Groundwater in the W1/W2 subunit (W1/W2), similar to the shallow water table system, flows away from a groundwater high point located near the northwest corner of MNL, toward the WBDR (southwest, south, and east); however, the W1/W2 does not appear to be hydraulically connected to the WBDR. There is also a W1/W2 potentiometric surface high point located to the south and southwest of the Greenbrook Elementary School. The groundwater in the W1/W2 from this high point appears to flow to the southwest (toward Keeneyville Creek) and to the north and west (toward the WBDR). This is consistent with the W1/W2 groundwater flow pattern observed during the first and second baseline groundwater monitoring events.

The water quality data evaluation presented in this report consists of a comparison of analytical results to the appropriate State of Illinois groundwater standards (35 IAC Part 620) and a discussion of whether the parameter was detected in leachate. 35 IAC Part 620 defines several classes of groundwater, including Class I and Class II. There are specific standards for each of these two groundwater classes. A determination regarding the class of groundwater or applicable groundwater standard at MNL has not yet been made; therefore, data are compared to both Class I and Class II groundwater standards. A brief discussion follows.

- One volatile organic compound (VOC), benzene, was present at 1 of the 34 sampling locations at a concentration that exceeded the Class I standard (but not the Class II standard).
- The concentrations of semivolatile organic compounds (SVOCs) and polycyclic aromatic hydrocarbons (PAHs) in wells sampled were below the applicable 35 IAC Part 620 Class I standards. Historically, SVOCs/PAHs have not been a constituent of concern in the leachate at the MNL.
- The concentrations of three metals exceeded 35 IAC Part 620 standards, as follows:
 - Barium (both total and dissolved) was reported above the 35 IAC Part 620 Class I and Class II standard of 2,000 ug/L in samples collected at 3 of the 34 wells sampled. Barium has been present at levels below the 35 IAC Part 620 standard during routine leachate sampling.

- Dissolved boron was reported at levels above the 35 IAC Part 620 Class I and Class II standard of 2,000 ug/L in samples from 3 of the 34 monitoring points. Historically, boron is not typically detected above the reporting limit during the routine leachate sampling. Also, on the occasions when it has been detected the dissolved boron concentrations have been well below the 35 IAC Part 620 Class I and II standards.
- Total lead was reported at levels above the 35 IAC Part 620 Class I standard of 7.5 ug/L (but not above the Class II standard of 100 ug/L) in samples from 3 of the 34 monitoring points. Dissolved lead did not exceed the Class I standard. Historically, lead is not detected above the reporting limit during the routine leachate sampling.
- The concentrations of several inorganic indicator parameters exceeded 35 IAC Part 620 standards, as follows:
 - Chloride (dissolved) was reported at concentrations above the 35 IAC Part 620 Class I and Class II standard of 200 mg/L in samples collected at 13 of the 34 monitoring locations. The chloride concentration in leachate has been above the 35 IAC Part 620 standard on certain occasions, but below the standard on other occasions. The presence of elevated chloride concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.
 - Total dissolved solids was present at a concentration that exceeded the Class I and Class II standards (both are 1,200 mg/L) at 15 of the 34 sampling locations. The TDS concentration in leachate has been above the 35 IAC Part 620 standard on certain occasions, but below the standard on other occasions. The presence of elevated TDS concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.
 - Dissolved sulfate was present at a concentration that exceeded the Class I and Class II standards (both are 400 mg/L) at 3 of the 34 locations. The sulfate concentration in leachate has generally been below the 35 IAC Part 620 standard. The presence of elevated sulfate concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.
- Elevated methane concentrations in groundwater were reported in samples from 6 of the 34 sampling locations. A regulatory standard for methane concentrations reported in groundwater is not presented in 35 IAC Part 620. 1,200 ug/L was used as a screening criterion, as it is equivalent to 5% methane by volume in air at equilibrium conditions.

Based on the July/August 2011 groundwater elevation data, the groundwater flow direction in the shallow zone and in the W1/W2 is similar to the groundwater flow direction described in previous reports.

1.4 Planned Events

Background groundwater monitoring Event 4 is planned to occur during the month of November 2011. A comprehensive report summarizing the four background events will be prepared following Event 4. Recommendations regarding a long-term monitoring program will be made within the Event 4 report.

Section 2

Introduction

2.1 Background

The Mallard North Landfill (MNL) is located in T 40N, R 10 E, Section 7, DuPage County, Illinois, near the Village of Hanover Park, approximately 28 miles west-northwest of downtown Chicago. The MNL and the land on which it is located are owned by the Forest Preserve District of DuPage County (District). A residential area is located to the north and west of the site. The West Branch of the DuPage River (WBDR) bounds the landfill on the east, south, and southwest. The Greenbrook Elementary School is located across the WBDR and to the east of the MNL. The Mallard Lake Landfill (MLL) (a closed permitted solid waste disposal facility) is located south of the MNL and on the opposite side of the WBDR (Figure 1).

In a document dated September 30, 2009, the District, the Illinois Environmental Protection Agency (IEPA) and the United States Environmental Protection Agency (USEPA) established long-term goals and remedial objectives for MNL. One of the long-term objectives was identical to a remedial goal: “groundwater monitoring to detect potential releases”. A Groundwater Monitoring Plan (GMP) was developed for the site, defining a baseline groundwater monitoring program (RMT, 2009). This baseline program was designed to define the current groundwater conditions at the site, and to collect sufficient data to develop a suitable long-term groundwater monitoring program. Initially, USEPA requested that four baseline monitoring events be conducted, the data be evaluated, and a long term monitoring program be developed.

The first baseline groundwater monitoring event was conducted in June and July 2010, and the results were reported in a Groundwater Evaluation report (RMT, 2010). The 2010 report contains a detailed discussion of geology and hydrogeology so those topics are not covered in this report. The 2010 report also recommended that the baseline monitoring program be modified based on the results of the first round of baseline groundwater monitoring. USEPA provided comments on the report in an attachment to a January 13, 2011 e-mail to the District (see Appendix A). The comments from USEPA, IEPA and the County of DuPage, and as clarified in subsequent discussion between the parties, requested that the second baseline sampling round be identical to the first round. It was agreed that the results of the first two baseline rounds would be evaluated to determine if the groundwater monitoring program should be modified for the third and fourth baseline monitoring events. The second round of baseline groundwater monitoring was conducted in April 2011.

The Baseline Groundwater Monitoring Event 2 was conducted during April 2011 as planned. The results of Event 2 were reported to the USEPA in a July 2011 report (TRC, 2011). The Event 2 report summarized the analytical results for Event 2; compared the results of Event 2 with those of Event 1; and, presented recommendations to reduce the number of monitoring wells to be sampled and to reduce the list of parameters to be analyzed during planned future Events 3 and 4. The USEPA approved modifications to the program in correspondence dated July 15, 2011 (Appendix A).

2.2 Purpose and Scope

This Baseline Groundwater Monitoring Event 3 Evaluation Report (Report) describes the results of the third baseline groundwater monitoring event that was completed during July/August 2011. The Report provides an evaluation of the current groundwater conditions.

Section 3

Groundwater Monitoring Results

Baseline Groundwater Monitoring Event 3

3.1 Introduction

The third round of baseline groundwater monitoring was completed during the period July 25 through August 2, 2011. The proposed Event 3 and 4 baseline monitoring program was presented in the Event 2 evaluation report (TRC, 2011) and was modified by the USEPA conditional approval letter of July 15, 2011 (Appendix A). The approved program is summarized in Table 1 (monitoring points) and Table 2 (analytical parameters). In July/August 2011, groundwater samples were collected from 34 of 35 monitoring points specified in Table 1. No sample was collected from GP-6, as this well was dry.

The groundwater samples were collected generally as described in the GMP (RMT, 2009). At some wells, more than one sampling attempt was necessary to collect sufficient sample volume to analyze for the extensive analytical list. A summary of the wells sampled and the parameters analyzed is presented in Table 3. The remainder of Section 3 provides details of the measured groundwater levels and the analytical results.

3.2 Groundwater Level Measurements

A comprehensive round of groundwater level measurements was collected by RMT on July 25, 2011, and is summarized in Table 4. Water levels at additional wells in the Northeast Area (southeast of MNL) were collected by AECOM on July 25 and 26, 2011, and are summarized in Table 5. The July 2011 data, as well as historical interpretations of groundwater flow, were used to generate a shallow water table map (Figure 2), and a map of the potentiometric surface within the W1/W2 subunit (Figure 3). The following subsections describe groundwater flow within these two zones.

3.2.1 Shallow Groundwater Flow

As shown on Figure 2, shallow groundwater flows away from a groundwater high located near the northwest corner of MNL, toward the WBDR (southwest, south, and east). There is also a water table high point located to the south and southeast of the Greenbrook Elementary School. The shallow groundwater flows from this high point to the southwest (toward Keeneyville Creek) and to the north and west (toward the WBDR). In other words, shallow groundwater flow from the MNL area and the

Greenbrook Elementary School area converges on a water table low point, located near the WBDR (i.e., the Greenbrook Elementary School is not located downgradient of the MNL). This is consistent with the shallow groundwater flow pattern observed during the first baseline groundwater monitoring event.

3.2.2 Groundwater Flow in W1/W2 Subunit

Figure 3 suggests that groundwater in the W1/W2 subunit (W1/W2), similar to the shallow water table system, flows away from a ground water high point located near the northwest corner of MNL, toward the WBDR (southwest, south, and east); however, the W1/W2 does not appear to be hydraulically connected to the WBDR. Instead, groundwater elevations at probes/wells screened in the W1/W2 at locations near the WBDR are as much as 10 feet lower than the WBDR, indicating the W1/W2 subunit does not discharge to the WBDR. There is also a W1/W2 potentiometric surface high point located to the south and southwest of the Greenbrook Elementary School. The groundwater in the W1/W2 from this high point appears to flow to the southwest (toward Keeneyville Creek) and to the north and west (toward the WBDR). In other words, groundwater flow in the W1/W2 from the MNL area and the Greenbrook Elementary School area converges on a potentiometric low point, located near the WBDR. (i.e., the Greenbrook Elementary School is not located downgradient of the MNL). This is consistent with the W1/W2 groundwater flow pattern observed during the first baseline groundwater monitoring event.

3.3 Evaluation of Analytical Results

The laboratory analysis of samples collected during the July/August 2011 groundwater monitoring event was performed by First Environmental Laboratories, Naperville, Illinois, an IEPA accredited laboratory (NELAP Accreditation Number 100292, see Appendix B). This is the third event of baseline groundwater quality data collected at MNL. Evaluation of the analytical results has been performed in order to provide an assessment of current groundwater quality conditions.

As indicated in Subsection 1.4, additional baseline groundwater monitoring (Event 4) will be implemented during November. The Event 3 evaluation presented below consists of a comparison of analytical results to the State of Illinois groundwater standards and a discussion of whether the parameter was detected in leachate. State of Illinois groundwater standards are contained in 35 Illinois Administrative Code (IAC) Part 620, Groundwater Quality. 35 IAC Part 620 defines several classes of groundwater, including Class I and Class II. There are specific standards for each of these two groundwater classes. A determination regarding the class of

groundwater present at the site or applicable groundwater standard has not yet been made; therefore, data are compared to both Class I and Class II groundwater standards.

Tables 6a and 6b present a summary of parameters/wells where a 35 IAC Part 620 Class I or Class II groundwater standard was exceeded during July/August 2011. Figure 5 identifies the July/August 2011 locations of the 35 IAC Part 620 groundwater standard exceedences. A summary of all the analytical and field parameter data, along with the analytical reports, is included in Appendix B. The analytical discussion below focuses on the 35 IAC Part 620 exceedences, as shown on Tables 6a and 6b. The analytical results at locations with exceedences have been compared to the presence of the parameter in the landfill leachate.

3.3.1 Organic Parameters

Volatile Organic Compounds

Analytical results for groundwater samples collected from the 34 monitoring locations sampled indicated that only one volatile organic compound (VOC), benzene, exceeded the 35 IAC Part 620 standard. The sample from well G-122 contained a benzene concentration of 23.4 ug/L which is above the 35 IAC Part 620 Class I standard of 5 ug/L and the Class II standard of 25 ug/L. G-122 is located in the southwestern corner of the MNL, close to the waste boundary, and on the MNL side of the WBDR. Historically, VOCs, at levels exceeding the 35 IAC Part 620 standard are not typically detected in leachate at the MNL.

Semivolatile Organic Compounds/Polyaromatic Hydrocarbons

The concentrations of semivolatile organic compounds (SVOCs) and polyaromatic hydrocarbons (PAHs) in wells sampled were below the applicable 35 IAC Part 620 Class I and Class II standards. Historically, SVOCs/PAHs have not been a constituent of concern in the leachate or groundwater at the MNL.

Methane

A regulatory standard for methane concentrations reported in groundwater is not presented in 35 IAC Part 620. However, for evaluation purposes, 1,200 ug/L was chosen for methane as a reference level because 1,200 ug/L of dissolved methane in groundwater equates to approximately 5.0% methane in air, or 100% of the LEL for methane.

Methane concentrations above 1,200 ug/L were reported in samples from six sampling locations including G-109, G-113, GP-02B, GP-31B, GP-37A, and MW-204D (shallow). These sample locations are on the east, south, and west perimeters (down gradient) of the MNL. With the exception of well MW-204D (shallow), all of these wells are located close to the waste boundary on the MNL side of the WBDR. With a few exceptions, these results are similar to the results of the first and second baseline groundwater monitoring events.

3.3.2 Inorganic Parameters

Metals

Three metals (barium, boron, and lead) were reported at concentrations above their respective 35 IAC Part 620 standards during the second baseline monitoring event as discussed below:

- **Barium** – Barium (both total and dissolved) was reported above the 35 IAC Part 620 Class I and Class II standard of 2,000 ug/L in samples collected at 3 of the 34 wells sampled: wells G-109 (2,150 ug/L total, 2,150 ug/L, dissolved), G-113 (2,110 ug/L-total), and G-120S (3,090 ug/L-total, 3,310 ug/L-dissolved). Wells G-113 and G-120S are located in the vicinity of each other along the south-central perimeter (down gradient) of the MNL, close to the waste boundary and on the MNL side of the WBDR. Well G-109 is located in the vicinity of the northeast perimeter of the MNL, close to the waste boundary and on the MNL side of the WBDR. Barium has been present at levels below the 35 IAC Part 620 standard during routine leachate sampling.
- **Boron** – Dissolved boron was reported at levels above the 35 IAC Part 620 Class I and Class II standard of 2,000 ug/L in samples from 3 of the 34 monitoring points (G-120S, G-122, and GP-02B). Concentrations reported in the samples from these four wells ranged between 2,430 ug/L and 2,720 ug/L. These sample points are located along the west and south-central perimeters (down gradient) of the MNL close to the waste boundary and on the MNL side of the WBDR (with the exception of GP-02B, which is not adjacent to the WBDR). Historically, boron is not typically detected above the reporting limit during the routine leachate sampling and on the occasions when it has been detected the concentrations have been well below the 35 IAC Part 620 standard.

- **Lead** – Total lead was reported at levels above the 35 IAC Part 620 Class I standard of 7.5 ug/L (but not above the Class II standard of 100 ug/L) in samples from 3 of the 34 monitoring points (GP-4C, GP-22A, and GP-37A). Reported concentrations for these wells ranged from 11 ug/L to 18 ug/L. These sample points are located primarily along the west perimeter (down gradient) of the MNL close to the waste boundary (GP-37A) and, with the exception of GP-4C (which is in the northwest corner and not adjacent to the river) and GP-22A (which is on the south side of the WBDR, on the MLL side of the WBDR. The dissolved lead concentration did not exceed a standard. This suggests that lead may be associated with particulate in the sample. Historically, lead is not detected above the reporting limit during the routine leachate sampling. Lead was reported at concentrations ranging from 3 ug/L to 1,470 ug/L in samples collected from 3 leachate seeps (near G-115, near G-119, and near MH-2) during May 2009 seep sampling events.

3.3.3 Indicator Parameters

Three indicator parameters (chloride, TDS, and sulfate) were reported at concentrations above their respective 35 IAC Part 620 standards during the third baseline sampling event as discussed below:

Chloride

Chloride (dissolved) was reported at concentrations above the 35 IAC Part 620 Class I and Class II standard of 200 mg/L in samples collected at 13 (total) and 13 (dissolved) of the 34 monitoring locations, including shallow and deep monitoring wells, gas probes, and monitoring locations on both sides of the WBDR. At locations where chloride was reported above the standard, the values ranged from 226 mg/L to 2,160 mg/L. The sampling points where chloride was reported above the standard are located along the east, south, and west perimeters (down gradient) of the MNL. The two highest chloride values (G-120S at 2,160 mg/L and GP-30B at 1,420 mg/L) are both located near the approximate limits of waste and on the MNL side of the WBDR. The chloride concentration in leachate has been above the 35 IAC Part 620 standard on certain occasions, but below the standard on other occasions. The presence of elevated chloride concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.

Total Dissolved Solids (TDS)

The 35 IAC Part 620 TDS Class I standard of 1,200 mg/L was exceeded at 15 of the 34 locations, with concentrations ranging as high as 5,060 mg/L. The locations of the exceedences were along the east, south, and west perimeters (down gradient) close to the waste boundary and on the MNL side of the WBDR (with the exception of G-116R and GP-02B; northwest corner). The TDS concentration in leachate has been above the 35 IAC Part 620 standard on certain occasions, but below the standard on other occasions. The presence of elevated TDS concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.

Sulfate

Dissolved sulfate was reported at concentrations above the 35 IAC Part 620 Class I and Class II standard of 400 mg/L at 3 of the 34 sampling locations. Reported values were as high as 1,460 mg/L. The exceedences were located along the east, south, and west perimeters (down gradient) of the MNL close to the waste boundary and on the MNL side of the WBDR (with the exception of GP-02B; northwest corner). The sulfate concentration in leachate has generally been below the 35 IAC Part 620 standard. The presence of elevated sulfate concentrations in groundwater at monitoring points immediately adjacent to the waste boundary is not unexpected.

3.4 Summary and Conclusions

Groundwater samples were collected from 34 monitoring points during July/August 2011 and the samples were analyzed for an extensive suite of organic and inorganic chemical parameters. Only one organic parameter (VOC) was detected at a concentration above a 35 IAC Part 620 standard: benzene. Methane was detected in a number of groundwater samples, mostly collected from the southeastern corner of the MNL. There is no 35 IAC Part 620 standard for methane. Three metals (barium, boron, and lead) were detected at a concentration above a 35 IAC Part 620 standard. Three indicator parameters (chloride, TDS, and sulfate) were reported at concentrations above their respective 35 IAC Part 620 standards. With few exceptions, 35 IAC Part 620 standard exceedences were observed at monitoring points close to the waste boundary and on the MNL side of the WBDR.

Section 4

References

- RMT. 2009. Groundwater Monitoring Plan, Mallard North Landfill. Forest Preserve District of DuPage County. November 2009.
- RMT. 2010. Groundwater Evaluation Report Event 1, Mallard North Landfill. Forest Preserve District of DuPage County. September 2010.
- TRC. 2011. Baseline Groundwater Monitoring Event 2 Evaluation Report, Mallard North Landfill. Forest Preserve District of DuPage County. July 2011.

Table 1
Baseline Groundwater Monitoring Program Locations - Event 3
Mallard North Landfill
Forest Preserve District of DuPage County

AREA	MONITORING WELL	RATIONALE FOR SAMPLING
North Side ⁽¹⁾	GP-6	Monitor shallow silty sand lens.
	G-102	VOCs had been detected historically at this well.
	G-105	Monitor deeper sand lens.
	G-108	Monitor sand lens.
West Side ⁽²⁾	GP-4C	Monitor deeper sand lens. Methane has been detected in GP-4C.
	GP-2A and GP-2B	Monitor shallower and deeper sandy clay lenses. Methane has been detected in both GP-2A and GP-2B.
	G-116R	A replacement well for G-116 (which has a cracked well casing).
	GP-37A	Methane has been detected at this well.
	G-122	Monitor sand and gravel layer.
	MW-201S and MW-201D	Monitor shallower gravel layer and deeper silty sand layer on the exterior side of the WBDR.
	G-114S and G-114D	Monitor shallower sand and gravel layer and deeper silt layer.
South Side ⁽³⁾	MW-202	Monitor shallow gravel layer on the exterior side of the WBDR.
	MW-203	Monitor shallow gravel layer on the exterior side of the WBDR.
	G-113	Monitor sand lens. Low concentrations of methane have been detected here.
	G-120S and G-120DR	Monitor shallower sand lens and deeper sand and gravel lens. Low concentrations of methane have been detected at G-120S. G-120DR is a replacement well for G-120D, which has a cracked well casing.
	GP-31B	Monitor shallower sandy clay lens near G-112R. Methane has been detected in GP-31B.
	GP-24B	Monitor deeper zone at an elevation below the base of the WBDR.
	MW-204S (deep) and MW-204D (shallow)	Monitor the shallower silty sand seam and the deeper gravel and silty sand seams on the exterior side of the WBDR. Methane has been detected at MW-204D (shallow).
	P-119B	Monitor deeper clayey silt layer.
	G-119	Monitor thin clayey sand seam. VOCs had been detected historically at this well.
	GP-30B	A granular layer was not encountered at this boring. However, methane has been detected at GP-30B.
	GP-22A and GP-22B	Monitor shallow silty clay and deeper clayey silt on the exterior side of the WBDR. GP-22B is screened below the base of the WBDR.
East Side ⁽⁴⁾	GP-20	Monitor relatively thin sand and gravel lens.
	P-118B	Monitor deeper granular zone below the base elevation of the landfill.
	GP-19	Monitor deeper gravel lenses.
	GP-16A and GP-16B	Monitor shallow gravel lens and deeper sand and gravel lens.
	P-117B	Monitor deeper granular zone below the base elevation of the landfill.
	G-109	Monitor relatively shallow sand and gravel lens.

Notes:

1. Refer to geologic cross section E-E', RMT August 2009.
2. Refer to geologic cross section F-F', RMT August 2009.
3. Refer to geologic cross section B-B', RMT August 2009.
4. Refer to geologic cross section B-B', RMT August 2009.

Created by: TK, 9/2011

Checked by: MW, 9/2011

Table 2
Baseline Groundwater Monitoring Program Parameters - Event 3
Mallard North Landfill
Forest Preserve District of DuPage County

PARAMETERS SPECIFIED IN RMT GROUNDWATER MONITORING PLAN	SPECIFIED IN 35 IAC PART 811.319(a)(2)	35 IAC GW STANDARD?	LABORATORY ANALYTICAL METHOD
VOCs	No	Yes, some analytes	8260B
SVOCs	No	Yes, some analytes	8270C
RCRA metals	--	--	--
Ag (t)	No	Yes	6010B
Ag (d)	No	Yes	6010B
As (t)	No	Yes	6010B
As (d)	Yes	Yes	6010B
Ba (t)	No	Yes	6010B
Ba (d)	No	Yes	6010B
Cd (t)	No	Yes	6010B
Cd (d)	Yes	Yes	6010B
Cr (t)	No	Yes	6010B
Cr (d)	Yes	Yes	6010B
Hg (t)	No	Yes	6010B
Hg (d)	Yes	Yes	6010B
Pb (t)	No	Yes	6010B
Pb (d)	Yes	Yes	6010B
Se (t)	No	Yes	6010B
Se (d)	No	Yes	6010B
Methane	No	No	3810
B (d)	Yes	Yes	6010B
Chloride (d)	Yes	Yes	1500CI-E
Mg (d)	Yes	No	6010B
Nitrate (d)	Yes	Yes	353.2R2.0
Sulfate (d)	Yes	Yes	375.2R2.0
TDS	Yes	Yes	2540C
Zn (d)	Yes	Yes	6010B
pH (field)	No	No	--
Conductivity (field)	No	No	--
Temperature (field)	No	No	--
DO (field)	No	No	--
Redox (field)	No	No	--
Turbidity (field)	No	No	--

Notes:

(t) - total, unfiltered.

(d) - dissolved, filtered.

Created by: TK, 9/2011

Checked by: MW, 9/2011

Table 3
Summary of Baseline Groundwater Monitoring – Event 3
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	ANALYTICAL PARAMETERS																							
	VOCs	SVOCs	METHANE	METALS																		CHLORIDE (d)	TDS	SULFATE (d)
				As (d)	As (t)	Ba (d)	Ba (t)	B (d)	Cd (d)	Cd (t)	Cr (d)	Cr (t)	Pb (t)	Pb (d)	Mg (d)	Hg (d)	Hg (t)	Se (d)	Se (t)	Ag (d)	Ag (t)	Zn (d)		
G102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G105	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G108	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G109	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G113	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G114S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G114D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G116R	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G119	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G120DR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G120S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
G122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP2A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP2B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP4C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP6																								
GP16A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP16B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP22A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP22B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP24B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP-30B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP-31B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GP-37A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-201S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-201D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-202	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-203	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-204S (deep)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-204D (shallow)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P-117B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P-118B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P-119B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34

Table 4
Summary of Groundwater Elevation Data Event 3 – MNL Locations
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	TOC ELEVATION (ft a.m.s.l.)	BOTTOM OF WELL OR TOP OF SEDIMENT AS MEASURED (ft a.m.s.l.)	TOP OF SCREEN (ft a.m.s.l.)	BOTTOM OF SCREEN (ft a.m.s.l.)	GROUNDWATER ELEVATION JULY 25 & 26, 2011
G101	807.33	755.74	762.10	757.1	
G102	803.66	759.31	762.56	757.56	779.05
G103	800.16	781.11	761.84	756.84	
G105	789.14	759.37	762.41	757.41	780.51
G106	782.89	757.42	762.43	757.43	
G108	774.97	753.06	757.57	852.57	768.19
G109	772.73	752.36	761.94	752.44	767.43
G110	772.39	742.10	767.30	742.32	772.39
G112R	777.78	724.57	NA	723.60	
G113	776.46	754.83	NA	753.60	765.41
G114S	773.8	NA	NA	NA	765.2
G114D	774.23	736.56	734.17	729.17	758.12
G115	775.78	755.69	755.10	750.10	
G116	793.99	762.15	757.10	752.10	
G116R ⁽¹⁾	793.99	762.15	757.10	752.10	782.36
G118	773.21	749.73	751.92	746.92	
G119	778.05	743.82	746.58	741.58	759.08
G120D	776.24	723.64	725.69	720.69	
G120DR ⁽²⁾	776.24	723.64	725.69	720.69	748.6
G120S	776.19	749.98	752.17	747.17	765.46
G121	776.38	749.81	752.79	747.79	
G122	783.03	754.23	756.87	751.87	765.52
G123S	779.23	758.35	763.23	758.23	
GP1	783.85	748.80	755.10	750.10	765.09
GP2A	792.62	772.25	777.25	772.25	778.88
GP2B	792.54	757.94	763.94	758.94	781.74
GP3	800.96	766.26	771.26	766.26	793.17
GP4A	807.63	791.55	796.55	791.55	797.92
GP4B	807.49	785.58	790.58	785.58	
GP4C	807.81	772.57	777.67	772.67	787.37
GP5	810.37	777.77	785.77	780.77	
GP6	813.59	798.59	802.59	800.59	DRY
GP7A	812.77	797.57	802.57	797.57	800.82
GP7B	812.81	763.47	773.47	768.47	
GP8A	806.50	796.97	798.97	796.97	799.45
GP8B	806.44	762.44	771.44	766.44	789.56
GP9A	803.20	789.63	791.63	789.63	
GP9B	803.09	759.59	770.59	765.59	
GP10A	796.75	787.01	789.01	787.01	DRY
GP10B	797.09	778.82	780.82	778.82	
GP10C	797.04	765.96	769.96	765.96	782.96
GP11A	790.79	781.05	784.05	781.05	781.59
GP11B	790.76	763.98	770.98	765.98	781.08
GP12	783.66	769.71	772.71	769.71	
GP13	779.68	764.70	766.70	764.70	773.72
GP14	775.15	752.00	754.00	752.00	769.82
GP15A	774.61	761.21	764.21	761.21	
GP15B	774.47	736.66	743.66	741.66	767.05
GP16A	776.04	758.04	761.04	758.04	771.74
GP16B	776.11	746.94	751.94	746.94	772.63
GP16C	776.35	737.77	743.27	740.27	

Table 4 (continued)
Summary of Groundwater Elevation Data Event 3 – MNL Locations
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	TOC ELEVATION (ft a.m.s.l.)	BOTTOM OF WELL OR TOP OF SEDIMENT AS MEASURED (ft a.m.s.l.)	TOP OF SCREEN (ft a.m.s.l.)	BOTTOM OF SCREEN (ft a.m.s.l.)	GROUNDWATER ELEVATION JULY 25 & 26, 2011
GP17	775.45	752.20	762.20	760.20	
GP18	775.15	751.60	756.60	751.60	
GP19	774.13	738.80	743.80	738.80	765.45
GP20	774.92	751.47	759.47	754.47	768.52
GP21A	777.01	757.86	762.86	757.86	770.98
GP21B	777.40	746.40	752.40	747.40	
GP22A	778.06	765.96	770.96	765.96	772.92
GP22B	777.55	742.80	749.80	744.80	757.8
GP23A	777.36	760.20	765.20	760.20	772.56
GP23B	777.11	742.36	756.36	751.36	
GP24A	778.12	760.25	765.25	760.25	
GP24B	777.85	750.83	755.83	750.83	NM
GP25A	778.25	765.72	770.72	765.72	772.97
GP25B	778.09	742.74	749.74	744.74	757.09
GP26A	780.85	759.20	764.20	759.20	
GP26B	779.70	745.25	752.25	747.25	
GP27A	777.53	765.40	770.40	765.40	771.56
GP27B	777.43	742.50	749.50	744.50	753.98
GP28A	775.41	762.28	764.28	762.28	767.01
GP28B	774.93	757.25	760.25	757.25	
GP28C	775.22	740.29	747.29	742.29	
GP29A	778.05	762.69	764.69	762.69	773.47
GP29B	777.89	742.59	749.59	744.59	768.24
GP30A	778.37	766.27	771.27	769.27	773.86
GP30B	778.22	755.16	760.16	755.16	771.52
GP31A	777.61	765.24	770.24	768.24	770.41
GP31B	777.22	754.13	759.13	754.13	760.94
GP32A	775.75	757.78	762.78	757.78	765.2
GP32B	776.42	740.85	747.85	742.85	765.13
GP33A	790.89	769.76	774.76	769.76	
GP33B	790.89	755.45	760.45	755.45	
GP34A	796.90	775.61	780.61	775.61	
GP34B	796.70	761.60	767.10	762.10	
GP35A	779.00	767.43	769.43	767.43	771.33
GP35B	778.77	755.54	760.54	755.54	766.18
GP37A	776.68	755.77	760.77	755.77	765.2
GP37B	777.13	741.83	748.83	743.83	
MW201D	NA	NA	718.80	708.80	NA
MW201S	770.18	748.65	763.00	748.00	765.39
MW202	775.79	757.09	767.80	752.80	764.99
MW203	773.02	755.60	765.50	750.50	765.12
MW204D ⁽³⁾	778.52	725.32	756.50	742.00	758.65
MW204S ⁽⁴⁾	777.78	745.16	734.20	724.20	750.62
P1A	811.38	762.87	762.31	760.31	
P3A	802.00	781.13	767.77	765.77	
P4C	798.15	790.97	791.10	790.10	
P5A	793.14	775.3	769.54	767.54	
P6C	786.05	776.48	776.63	774.63	

Table 4 (continued)
Summary of Groundwater Elevation Data Event 3 – MNL Locations
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	TOC ELEVATION (ft a.m.s.l.)	BOTTOM OF WELL OR TOP OF SEDIMENT AS MEASURED (ft a.m.s.l.)	TOP OF SCREEN (ft a.m.s.l.)	BOTTOM OF SCREEN (ft a.m.s.l.)	GROUNDWATER ELEVATION JULY 25 & 26, 2011
P7A	781.34	765.46	765.91	763.91	
P7B	781.37	773.95	774.48	772.48	
P117B	774.25	751.02	721.31	719.31	762.56
P118B	773.04	739.97	723.76	721.76	755.64
P119B	778.07	718.20	721.31	719.31	751.72
P121B	776.13	723.25	723.61	721.61	756.58

Notes:

"-" - not measured.

NA - not available.

774.85 - Bold indicates that the screen is completely submerged.

1. G116R was installed in May 2010 to replace G116, which has a cracked well casing. Elevations are approximate.
2. G120DR was installed in May 2010 to replace G120D, which has a cracked well casing. Elevations are approximate.
3. MW204D is the shallow well at this well nest. It is labeled as MW-204D in the field.
4. MW204S is the deep well at this well nest. It is labeled as MW-204S in the field.

Created by: TK, 9/2011

Checked by: MW, 9/2011

Table 5
Summary of Groundwater Elevation Data Event 3 – Northeast Area Locations ⁽¹⁾
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	GROUND ELEVATION (ft a.m.s.l.)	TOP OF SCREEN (ft a.m.s.l.)	BOTTOM OF SCREEN (ft a.m.s.l.)	GROUNDWATER ELEVATION (ft a.m.s.l. (7/25 & 26/2011))
ML-01	NA	NA	NA	--
ML-02	NA	NA	NA	--
ML-03	NA	NA	NA	--
ML-06D	792.95	745.0	740	755.33
ML-06I	792.81	769.5	750.3	756.33
ML-06S	792.53	787.3	777.5	<778.12
ML-07	789.06	750.1	740.1	--
ML-08D	791.34	744.2	724.6	753.05
ML-08I	791.26	771.2	751.6	756.04
ML-08S	791.31	788.3	773.6	784.16
ML-09D	794.23	733.6	724	746.33
ML-09I	794.14	770.0	750.4	758.03
ML-09S	794.10	788.1	773.4	784.16
ML-10D	797.64	732.5	722.9	745.63
ML-10I	798.04	771.7	752.3	773.29
ML-10S	798.09	795.0	775.4	790.94
ML-11	787.07	767.6	747.8	--
ML-11D	787.15	743.1	723.5	--
ML-12	791.21	772.1	752.5	--
ML-13I	800.74	763.3	753.3	<753.38
ML-13S	800.77	780.4	770.4	774.97
ML-14	799.40	771.8	752.2	794.89
ML-15I	799.37	770.2	755.2	--
ML-15S	799.48	783.8	773.8	--
ML-16	798.29	762.8	752.8	--
ML-17	780.92	763.3	743.7	777.67
ML-18	769.57	764.6	749.8	764.51
ML-19	793.08	773.1	763.1	772.52
ML-20	797.78	757.8	747.8	752.32
ML-21	793.75	763.8	748.8	--
ML-22	792.89	765.4	760.4	--
ML-23	797.65	780.7	766	770.95
ML-24	788.09	770.1	765.1	770.38
ML-24S	NA	NA	NA	--
ML-25D	787.12	724.6	714.6	--
ML-25I	787.43	747.4	742.4	--
ML-25S	787.40	760.4	755.4	--
ML-26I	780.82	753.3	749.8	--
ML-26S	780.83	760.3	755.3	766.65
ML-27	784.13	761.6	751.6	--
ML-28	797.83	777.8	767.8	--

Table 5 (continued)
Summary of Groundwater Elevation Data Event 3 – Northeast Area Locations ⁽¹⁾
Mallard North Landfill
Forest Preserve District of DuPage County

WELL NO.	GROUND ELEVATION (ft a.m.s.l.)	TOP OF SCREEN (ft a.m.s.l.)	BOTTOM OF SCREEN (ft a.m.s.l.)	GROUNDWATER ELEVATION (ft a.m.s.l. (7/25 & 26/2011)
ML-29	788.79	772.8	767.8	772.63
ML-29S	788.72	780.7	775.7	787.47
ML-30	788.28	768.3	763.3	--
ML-31	788.07	770.1	765.1	--
ML-32	797.23	777.2	767.2	777.05
ML-33	786.27	768.3	763.3	--
ML-34	787.15	768.2	758.2	--
ML-36	786.26	767.6	762.6	--

Notes:

"--" - not measured.

NA - not available.

774.85 - Bold indicates that the screen is completely submerged.

Footnote:

1. Groundwater elevations recorded by AECOM and provided to TRC.

Created by: TK, 9/2011

Checked by: MW, 9/2011

Table 6A
Parameters That Exceed Current IEPA Part 620 Class I Groundwater Quality Standards
Mallard North Landfill, Hanover Park, Illinois
July/August 2011

PARAMETER	UNITS	CLASS 1 STANDARD	WELL	DATE	RESULT	DATA FLAGS
BARIUM, DISSOLVED	UG/L	2000	G109	7/26/2011	2150	
			G120S	7/28/2011	3310	
BARIUM, TOTAL	UG/L	2000	G109	7/26/2011	2150	
			G113	7/28/2011	2010	
			G120S	7/28/2011	3090	
BENZENE	UG/L	5	G122	7/28/2011	23.4	
BORON, DISSOLVED	UG/L	2000	G120S	7/28/2011	2460	
			G122	7/28/2011	2430	
			GP-02B	7/27/2011	2720	
CHLORIDE, DISSOLVED	MG/L	200	G109	7/26/2011	820	
			G113	7/28/2011	1080	
			G114S	7/27/2011	248	
			G116R	7/26/2011	950	
			G119	8/1/2011	1300	
			G120S	7/28/2011	2160	
			G122	7/28/2011	602	
			GP-02B	7/27/2011	1120	
			GP-16A	7/26/2011	226	
			GP-16B	7/26/2011	239	
			GP-30B	7/26/2011	1420	
			MW-201D	7/27/2011	430	
			MW-201D DUP	7/27/2011	440	
			P-119B	7/27/2011	480	
LEAD, TOTAL	UG/L	7.5	GP-04C	7/26/2011	18	
			GP-22A	8/1/2011	16	
			GP-37A	8/1/2011	11	
SOLIDS, TOTAL DISSOLVED	MG/L	1200	G109	7/26/2011	2860	
			G113	7/28/2011	3070	
			G114D	7/27/2011	1280	
			G116R	7/26/2011	3380	
			G119	8/1/2011	3300	
			G120S	7/28/2011	5060	
			G122	7/28/2011	2480	
			GP-02B	7/27/2011	3880	
			GP-16B	7/26/2011	1900	
			GP-20	7/26/2011	1270	
			GP-30B	7/26/2011	2900	
			GP-37A	8/1/2011	1210	
			P-117B	8/2/2011	1740	
			P-118B	7/27/2011	2180	
			P-119B	7/27/2011	1280	

Table 6A
Parameters That Exceed Current IEPA Part 620 Class I Groundwater Quality Standards
Mallard North Landfill, Hanover Park, Illinois
July/August 2011

PARAMETER	UNITS	CLASS 1 STANDARD	WELL	DATE	RESULT	DATA FLAGS
SULFATE, DISSOLVED	MG/L	400	GP-02A	8/1/2011	680	
			P-117B	8/2/2011	1100	
			P-118B	7/27/2011	1460	

Table 6B
Parameters That Exceed Current IEPA Part 620 Class II Water Quality Standards
Mallard North Landfill, Hanover Park, Illinois
July/August 2011

PARAMETER	UNITS	CLASS 2 STANDARD	WELL	DATE	RESULT	DATA FLAGS
BARIUM, DISSOLVED	UG/L	2000	G109	7/26/2011	2150	
			G120S	7/28/2011	3310	
BARIUM, TOTAL	UG/L	2000	G109	7/26/2011	2150	
			G113	7/28/2011	2010	
			G120S	7/28/2011	3090	
BORON, DISSOLVED	UG/L	2000	G120S	7/28/2011	2460	
			G122	7/28/2011	2430	
			GP-02B	7/27/2011	2720	
CHLORIDE, DISSOLVED	MG/L	200	G109	7/26/2011	820	
			G113	7/28/2011	1080	
			G114S	7/27/2011	248	
			G116R	7/26/2011	950	
			G119	8/1/2011	1300	
			G120S	7/28/2011	2160	
			G122	7/28/2011	602	
			GP-02B	7/27/2011	1120	
			GP-16A	7/26/2011	226	
			GP-16B	7/26/2011	239	
			GP-30B	7/26/2011	1420	
			MW-201D	7/27/2011	430	
			MW-201D DUP	7/27/2011	440	
SULFATE, DISSOLVED	MG/L	400	P-119B	7/27/2011	480	
			GP-02A	8/1/2011	680	
			P-117B	8/2/2011	1100	
			P-118B	7/27/2011	1460	

Table 7
Summary of Dissolved Methane Analytical Results
Mallard North Landfill
Forest Preserve District of DuPage County

WELL	JUNE 2010 RESULT⁽¹⁾ (ug/L)	APRIL 2011 RESULT⁽¹⁾ (ug/L)	JULY 2011 RESULT⁽¹⁾ (ug/L)
G101	4.6	< 2	--
G102	46.2	48.8	68.4
G102 DUP	--	37.4	--
G103	< 2	< 2	--
G103 DUP	--	< 2	--
G105	< 2	< 2	68.7
G106	17.5	38.7	--
G106 DUP	14.6	--	--
G108	< 2	< 2	< 7
G108 DUP	< 2	--	< 7
G109	4160	2510	2040
G109 DUP	--	2440	--
G112R	607	1010	--
G113	2070	1640	1840
G114D	1500	1160	420
G114S	4330	955	444
G114S DUP	6430	--	--
G115	22.3	200	--
G116R	660	1870	1130
G116R DUP	426	--	--
G118	< 2	< 2	--
G118 DUP	--	< 2	--
G119	3590	496	1180
G120DR	--	199	125
G120S	4760	1490	1130
G120S DUP	--	1530	--
G121	14.5	25.3	--
G122	2630	3400	598
G123S	< 2	36.2	--
G151R	186	--	--
GP-02A	64.1	855	469, < 7 ⁽²⁾
GP-02B	5080	2060	2440
GP-04B	7.6	< 2	--
GP-04C	66.1	28.7	15.3
GP-06	< 2	< 2	--
GP-06 DUP	< 2	--	--
GP-08B	--	5.1	--
GP-11B	15.5	19.4	--
GP-16A	573	489	190
GP-16B	414	45	541

Table 7 (continued)
Summary of Dissolved Methane Analytical Results
Mallard North Landfill
Forest Preserve District of DuPage County

WELL	JUNE 2010 RESULT⁽¹⁾ (ug/L)	APRIL 2011 RESULT⁽¹⁾ (ug/L)	JULY 2011 RESULT⁽¹⁾ (ug/L)
GP-19	75.5	675	690
GP-20	3.4	9	22.6
GP-21A	48.2	11.2	--
GP-21B	65	3.3	--
GP-22A	3.3	< 2	< 7
GP-22B	848	352	528
GP-23A	348	651	--
GP-23B	1080	476	--
GP-24A	243	520	--
GP-24B	610	494	374
GP-25A	31.8	113	--
GP-25B	471	962	--
GP-27A	< 2	5.9	--
GP-27B	14.3	260	--
GP-29A	615	283	--
GP-29B	< 2	3.9	--
GP-30B	3090	1530	469
GP-31B	2500	4040	1770
GP-32B	24.8	225	--
GP-35A	< 2	< 2	--
GP-35B	329	79.6	--
GP-37A	84.4	4700	2180
MW-201D	241	207	195
MW-201D DUP	--	--	863
MW-201S	8.4	26.9	139
MW-201S DUP	8	23.5	--
MW-202	< 2	< 2	< 7
MW-202 DUP	< 2	--	< 7
MW-203	3.3	3	< 7
MW-203 DUP	--	3.9	< 7
MW-204D	3270	1550	1380
MW-204S	9.5	118	134
P-117B	25.1	64.8	61.1
P-118B	< 2	20.1	< 7
P-119B	172	361	179
P-121B	409	190	--

Footnotes:

⁽¹⁾ Methane concentrations greater than 1,200 ug/L have been deemed elevated. A concentration of approximately 1,200 ug/L equates to approximately 5.0% methane in air, or 100% of the LEL for methane.

⁽²⁾ Resampled.